Analysis and Reporting

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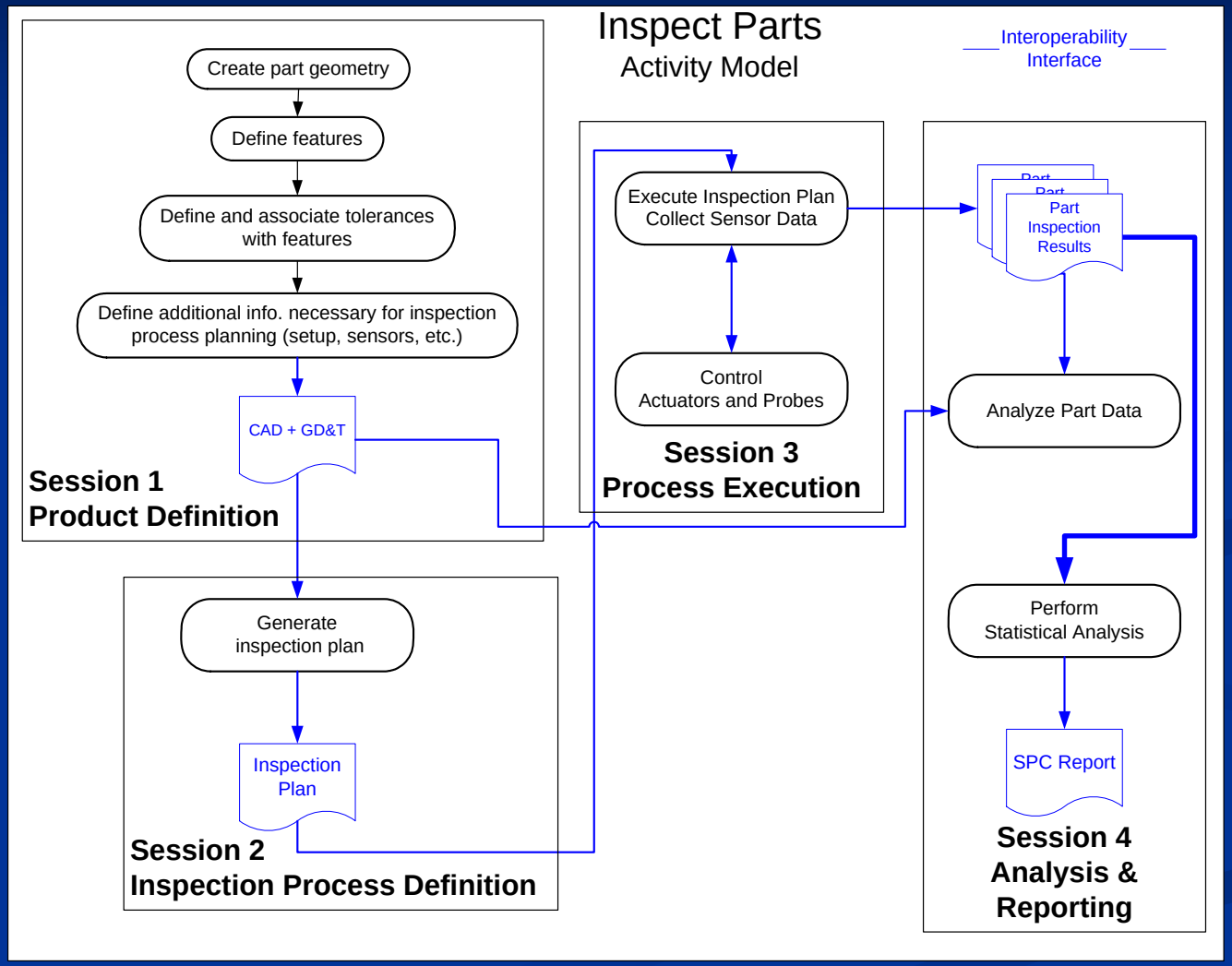
Note: The presentation should be about 8 to 10 minutes. Use the slides to show the group Your work, but try to talk them through your thought process. Don't forget that they all can Read what you tabulate, but they can't grasp the essence and passion of the discussion from The visuals

Analysis and Reporting Team

- Bob Stone – Origin
- Rich Knebel – Zeiss
- Kim Summerhays – MetroSage / USF
- Fredrick Wandeback – IVF
- Per-Johan Wahlborg – IVF
- Joe Schafer – UGS
- Bob Brown – Mitutoyo
- Alberto Griffa – Geomagic
- Ted Vorburger – NIST
- Joe Falco – NIST

Activity Diagram



Key Findings for the Current State

Key Functions	Deficiencies – Where Does it Hurt? How Badly?	Barriers – What's in the Way?	Emerging Best Practices
Generate Sensor Data	No attribute data Cannot handle large data sets - performance Non-uniform implementation of standards	· Multiple standards and specifications (i.e., AIMS, QS-stat ASCII, AP219, DMIS, DML, I++, …)	DML DMIS AP219
Report to Business Systems	Lack of simplicity of standards · Interfacing quality data to business ERP	· We don't understand what they need and they don't understand what they can get.	OAGI UBL
Measurement Planning	· Lack of knowledge about appropriate inspection technique (i.e., tolerances, algorithm sampling plan)	.	DITS Automotive measurement practices (AP/QP) Mil Specs (Z1-3 …)
Traceability Data	Non-uniform implementation of standards Insufficient links between traceability and inspection data	· Multiple standards/specifications/practice	AIAG sub committee MEQM AP238 traceability comp ASQ DMIS
Perform Statistical Analysis	Lack of statistical standardization Lack of knowledge	Multiple standards/specifications Not high on customers perceived list of priorities	AIAG CNOMO GM Juran/Demming Renishaw
Evolve Manufacturing Process	No standard methodology for adjusting a process Unambiguously communicating process change	No standard machine controller interface Human link	ISO 14025 (QS 9000) M&G Codes Boeing AS 9001 AP238 (STEP NC) Gleasonworks Feedback Process (12 adjustments)

Vision

- A unified data model (integrated resources) with a common understanding of the definitions in the data model.
- Portability is a requirement.
- Accessibility to all data without duplication in an easy way (customer perspective)

Vision Attributes

Characteristics of the Vision for "Generate Sensor Data"

- Allow for the easy capture of data from any sensor
- Data has the same topology.
- Efficient data structure

Characteristics of the Vision for "Report to Business Systems"

- Automatic delivery of data to the semantics of a business systems

Characteristics of the Vision for "Measurement Planning"

- A educated work force
- Continuous improvement of the measurement process
- Automatic delivery of data to the semantics of a measurement planning system

Vision Attributes

Characteristics of the Vision for "Traceability Data"

- Traceability data is only entered once or captured automatically
- Common terminology
- Easy ad-hoc filtering

Characteristics of the Vision for "Perform Statistical Analysis"

- More visible role for uncertainty
- Uniform calculation methods with a reference to the calculation method used
- Intuitive results analysis with the ability to drill down

Characteristics of the Vision for "Evolve Manufacturing Process"

- Automatic and easy manual adjustments of manufacturing equipment
- Ensure that analysis and reporting standards efforts are coordinated with the standards efforts of manufacturing planning and execution

"To Be" Activity Diagram